REMARKS

This paper is submitted in response to the final Office action mailed on February 3, 2009. This paper amends claims 1, 16, 24, 26, 38, 40, 46 and 49. Accordingly, after entry of this Amendment and Response, claims 1-52 will be pending.

I. Specification

The specification has been amended to remove the embedded hyperlink and/or browser executable from paragraph [1007] and is now in compliance with § 608.01 of the MPEP.

Additionally, paragraph [1095] of the specification has been amended to delete the reference to signals and waves as suggested by the Office action.

Accordingly, Applicant believes the specification is in allowable form.

II. Claim Rejections Under 35 U.S.C. § 101

Claims 24, 38, 40-45 and 49-52 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Specifically, the Office action suggests that claims 24, 38, 40-45 and 49-52 include "non-statutory elements, 'machine-readable media' and 'computer readable media.'" *See Office action, page 4.* The Office action states "these elements are non-statutory because the specification defines they include the form of signals and/or waves." *See Office action, page 4.* In response, paragraph [1095] has been amended to delete the references to signals and waves and claims 24 and 38 have been amended to reference tangible storage mediums. Thus, the Applicant believes the rejections have been addressed and for at least the reasons recited above, claims 24, 38, 40-45 and 49-52 are directed to statutory subject matter and in conformance with 35 U.S.C. §101 and such indication is respectfully requested.

III. Claim Rejections Under 35 U.S.C. § 103

Claims 1-52 are rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 7,103,877 to Arnold et al (hereinafter "Arnold") in view of U.S. Patent No. 6,374,367 to Dean et al (hereinafter "Dean"). Obviousness requires that the prior art reference (or references when combined) must teach or suggest all the claim limitations. For at least the reasons cited below, it is respectfully submitted that the combination of Arnold and Dean do not teach or suggest all limitations of the claims and therefore cannot make any of the above listed claims obvious.

Claims 1, 16, 26, 40, 46 and 49 are independent claims from which claims 2-25, 27-39, 41-45, 47-48 and 50-51 depend. As such, the initial arguments will focus on

independent claims 1, 16, 26, 40, 46 and 49 as amended herein. Support for the amendments to claims 1, 16, 26, 40, 46 and 49 may be found at least at paragraphs [1038]-[1040].

As an initial matter, Applicant respectfully disagrees with the Office action statement "if the claims allowed, it would exclude the public from practicing profiling" for at least the following reasons. *See Office action, page 3.*

First, the independent claims have been amended rendering the concerns moot. Second, the Applicant respectfully submits that claims 1-52 are generally directed to profiling, but the Applicant is not attempting to claim the general notion of profiling, but rather the specific form claimed.

A. Claims 1, 16, 26, 40, 46 and 49 as amended herein, are patentable over Arnold in view of Dean because the combination of Arnold and Dean do not disclose tagging instruction instances that may accrue time based on the loading of data, with identifiers that describe the instruction instances with source-level data object language constructs

Applicant respectfully submits that Arnold does not teach or suggest tagging instruction instances that may accrue time based on the loading of data, with identifiers that describe the instruction instances with source-level data object language constructs as recited by claim 1 and similarly recited by claims 16, 26, 40, 46 and 49, as amended herein.

Arnold is generally directed to characterizing program behavior by sampling information at selected program points. In Arnold, the system collects "information at a subset of distinguished program points," and particularly, collects "a statistical sample of the information that would be collected at all identified program points." *See Arnold, col. 2, lines 19-24.* In Arnold, the compiler may insert yield points at the distinguished program points where information may be collected and the yield points may be placed in all method prologues and in all loop headers. Arnold also discusses that the yield points may be placed at an arbitrary subset or program points. Although Arnold discusses points at which information may be collected, there is no discussion of tagging instruction instances that may accrue time based on the loading of data. Indeed, in Arnold, there is no discussion of characterizing program behavior or collecting information based on time to load data. Thus, Arnold does not disclose tagging instruction instances, that may accrue time based on the loading of data, with identifiers that describe the instruction instances with source-level data object language constructs.

Next, Applicant respectfully submits that Dean does not teach or suggest tagging instruction instances that may accrue time based on the loading of data, with identifiers that describe the instruction instances with source-level data object language constructs as recited by claim 1 and similarly recited by claims 16, 26, 40, 46 and 49, as amended herein.

Instead, Dean is directed to hardware sampling by monitoring the performance of operating computer systems by recording a sample of relevant information from transactions and relating the sampled events to individual transactions. Dean discusses monitoring processors, memory sub-systems, I/O interfaces, graphics controllers, network controllers, and so on, however, Dean does not teach, disclose or discuss data profiling. Accordingly, Dean does not disclose or describe in any way tagging instruction instances that may accrue time based on the loading of data, with identifiers that describe the instruction instances with source-level data object language constructs as recited by claim 1 and similarly recited by claims 16, 26, 40, 46 and 49, as amended herein.

For at least the reasons set forth above, independent claims 1, 16, 26, 40, 46 and 49, as amended herein, are patentable under 35 U.S.C. § 103 over Arnold in combination with Dean.

B. Claims 1, 16, 26, 40, 46 and 49 are patentable over Arnold in view of Dean because the combination of Arnold and Dean do not disclose attributing runtime events to source-level data objects describing units of data identifiable in source code

Claims 1, 16, 26, 40, 46 and 49 are independent claims from which claims 2-25, 27-39, 41-45, 47-48 and 50-51 depend. As such, the initial arguments will focus on independent claims 1, 16, 26, 40, 46 and 49 as amended herein.

In light of the discussion set forth above regarding profiling, Applicant respectfully re-submits the argument previously set forth in the response dated March 13, 2008, that Arnold does not teach or suggest attributing "runtime events to source-level data objects describing units of data identifiable in source code" as recited by claim 1 and similarly recited by claims 16, 26, 40, 46 and 49, as amended herein. The Office action suggests that Arnold discloses "a software tool that, based at least in part on a predefined association between an instruction instance in executable code and a representation of a source-level data object language construct corresponding thereto, attributes runtime events to source-level data objects describing units of data identifiable in source code" as recited in amended claims 1, 16, 26, 40, 46 and 49. It is respectfully submitted that Arnold does not disclose "a representation of a source-level data object construct" as set out in claim 1 and similarly recited by claims 16, 26, 40, 46 and 49 and does not disclose source-level data objects in anyway.

Instead, Arnold discloses a mechanism to collect a statistical sample of information collected at all identified program points. *See Arnold, col. 2, lines 20-23.* Additionally, in Arnold, "it is assumed that the information is being collected from a compiled binary program." *See Arnold, col. 3, lines 1-3.* Arnold does not provide any discussion regarding source-level data objects because the information collected in Arnold is collected from a

compiled binary program and does not involve source code or units of data identifiable in source code as recited in amended claims 1, 16, 26, 40, 46 and 49. Stated differently, Arnold does not disclose source-level data objects because Arnold collects information from a compiled binary program and a compiled binary program does not produce or provide source-level information or units of data identifiable in source code. Thus, Arnold does not disclose source-level data objects describing units of data identifiable in source code and does not disclose attributing runtime events to source-level data objects.

Arnold also discloses inserting yield points at distinguished program points. *See Arnold, col. 3, lines 17-18.* Arnold states, "a wide variety of sampling information may be collected when a yield point is taken. That is, a low-level mechanism exists that is available to map from a taken yield point to a method." *See Arnold, col. 5, lines 14-17.* Although Arnold maps the collected information, the information is mapped to a method. Accordingly, Arnold does not disclose or describe in any way, attributing runtime events to source-level data objects describing units of data identifiable in source code.

Next, Applicant respectfully submits that Dean does not teach or suggest attributing "runtime events to source-level data objects describing units of data identifiable in source code" as recited by claim 1 and similarly recited by claims 16, 26, 40, 46 and 49, as amended herein. The Office action suggests that Dean discloses "a software tool that, based at least in part on a predefined association between an instruction instance in executable code and a representation of a source-level data object language construct corresponding thereto, attributes runtime events to source-level data objects describing units of data identifiable in source code" as recited in amended claims 1, 16, 26, 40, 46 and 49. It is respectfully submitted that Dean does not disclose attributing runtime events to source-level data objects. Indeed, Dean does not discuss source-level data objects describing units of data identifiable in source code.

Instead, Dean is directed to hardware sampling by monitoring the performance of operating computer systems by recording a sample of relevant information from transactions and relating the sampled events to individual transactions. Dean stores state information but does not attribute the stored information to source-level data objects. Dean "shows the details of how a buffer 300 can be allocated for storing state information...the buffer includes a status field, an address field, a context field, a transaction source field, an instruction field, a latency field..." *See Dean, col. 5, lines 59-64.* Dean uses the buffer to store information about the state and the transaction associated with the state. In Dean, "the status field 310 stores state information pertaining to the particular transaction being processed... the address field 320 can store the virtual and/or physical addresses associated with the transaction...." *See Dean, col. 5, lines 65-67, col. 6, lines 5-7.* Dean uses the buffer to store this information, thus eliminating any reason to map information to source code.

Additionally, Dean has no reason or motivation to map information to the source code as Dean monitors the performance of an operating computer system and is not directed to optimizing code performance. Accordingly, Dean does not disclose or describe in any way, attributing runtime events to source-level data objects describing units of data identifiable in source code.

For at least the reasons set forth above, independent claims 1, 16, 26, 40, 46 and 49, as amended herein, are patentable under 35 U.S.C. § 103 over Arnold in combination with Dean.

C. Dependent claims are non-obvious

Dependent claims 2-25, 27-39, 41-45, 47-48 and 50-51 depend upon and contain all the limitations of independent claims 1, 16, 26, 40, 46 and 49. Therefore for at least the reasons mentioned above, the combination of Arnold and Dean fails to teach or suggest each and every limitation of dependent claims 2-25, 27-39, 41-45, 47-48 and 50-51. As such dependent claims 2-25, 27-39, 41-45, 47-48 and 50-51 are patentable under 35 U.S.C. § 103 over Arnold in combination with Dean.

IV. Conclusion

The Assignee thanks the Examiner for his thorough review of the application. The Assignee respectfully submits the present application, as amended, is in condition for allowance and respectfully requests the issuance of a Notice of Allowability as soon as practicable.

This Amendment is submitted contemporaneously with a Request for Continued Examination. Accordingly, please charge Deposit Account no. 04-1415 in the amount of $810.00 for the Request for Continued Examination fee. The Assignee believes no fees or petitions are due with this filing. However, should any such fees or petitions be required, please consider this a request therefor and authorization to charge Deposit Account No. 04-1415 as necessary.

If the Examiner should require any additional information or amendment, please contact the undersigned attorney.

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Respectfully submitted,

Robert M. Tuttle, Registration No. 54,504
Attorney for Applicant
USPTO Customer No. 66083

DORSEY & WHITNEY LLP
Republic Plaza Building, Suite 4700
370 Seventeenth Street
Denver, Colorado 80202-5647
Phone: (303) 629-3400
Fax: (303) 629-3450